

We claim:

1. A bootstrap regulator circuit comprising
an op amp which generates a control signal during steady state operation,
a regulator for providing an output signal and responsive to the control
signal,
a switch operatively connected to disconnect the control signal from the
regulator during initialization,
a bootstrap circuit connected substantially in parallel with the switch such
that, when the switch is opened, the bootstrap circuit substantially controls the output
signal during initialization, and when the switch is closed, the bootstrap circuit has
substantially no effect on the output signal.
2. The bootstrap regulator circuit of claim 1 wherein the bootstrap circuit is in
parallel with both the switch and the regulator.
3. The bootstrap regulator circuit of claim 1 wherein the switch is a FET.
4. The bootstrap regulator circuit of claim 1 configured to be implemented in
an integrated circuit.
5. The bootstrap regulator circuit of claim 1 wherein the opening of the switch
is controlled by the bootstrap circuit.
6. The bootstrap regulator circuit of claim 1 wherein the bootstrap circuit is
capable of preventing unregulated voltages in the range of up to 30 volts from being
applied to downstream devices.
7. The bootstrap regulator circuit of claim 1 wherein the bootstrap circuit is
capable of preventing unregulated voltages in the range of up to 80 volts from being
applied to downstream devices.
8. A bootstrap regulator circuit comprising
an op amp which generates a control signal during steady state operation,

a regulator for providing an output signal and responsive to the control signal,

a switch operatively connected to disconnect the control signal from the regulator during initialization,

a bootstrap circuit connected substantially in parallel with the switch and the regulator, and which controls the operation of the switch such that, when the switch is opened, the bootstrap circuit substantially controls the output signal during initialization to prevent unregulated voltages from being applied to downstream devices and, when the switch is closed, the bootstrap circuit has substantially no effect on the output signal.

9. The circuit of claim 9 wherein the circuit and the downstream devices are implemented on a single die.

10. A method for preventing unregulated voltages from being applied to downstream devices during initialization of a circuit comprising the steps of
providing a regulator which, during steady state operation, receives at one input an unregulated voltage and supplies at its output a regulated voltage to an output node,
detecting an initialization event,
preventing the unregulated voltage from being applied to the output node substantially when the initialization event begins by disabling the regulator,
establishing a reference voltage which increases during the initialization event and reaches a steady state value by the end of the initialization event,
enabling the regulator in response to the reference voltage reaching substantially steady state value.

11. The circuit of claim 8 in which the bootstrap circuit establishes its own reference voltage to control the operation of the switch.

12. A regulator circuit for use in solid state devices comprising
A bootstrap regulator circuit comprising
an op amp which generates a control signal during steady state operation,
a regulator for providing an output signal to an output node and responsive to the control signal,

a switch connected between the op amp and the regulator to disconnect the control signal from the regulator in response to a reset signal,

a bootstrap circuit, responsive to a reference voltage, for generating a bias voltage which controls the output node from the time the reset signal is applied until the reference voltage reaches substantially steady state, the bootstrap circuit further causing the switch to reconnect the control signal to the regulator when the voltage reference reaches a substantially steady state value.